PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	Group Art Unit: 3618
JOHN S. BIBB, ET AL.	Examiner: Christopher Bottorff
Application Number: 09/587,544	Paper No.: 12
Filed: June 5, 2000	
Title: PILOT HYDRAULIC CONTROL FOR A PAIR OF STABILIZER LEGS ON A BACKHOE LOADER MACHINE	
Attorney Docket No.: 00-318	

Peoria, Illinois 61629-6490

April 2, 2003

Assistant Commissioner for Patents
Washington, D.C. 20231

BRIEF ON APPEAL

Sir:

Transmitted herewith are three copies of a Brief on Appeal in the above-identified application.

Additionally, a fee transmittal in duplicate is attached to charge the appropriate fee.

Respectfully submitted,

Diana L. Charlton

Diana L. Charlton
Registration No. 36,103
Caterpillar Inc.

Telephone: (309) 675-5083
DLC:vlm
Enc.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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	)	
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BRIEF ON APPEAL

Sir:

This is an appeal under 37 CFR § 1.191 to the Board of Patent Appeals and Interferences of the United States Patent and Trademark Office from the final rejection of Claims 1-6 and 8-18 of the above-identified patent application. These claims were indicated as finally rejected in an Office Action dated April 30, 2002, along with an Advisory Action dated 1/10/2003. Three copies of the brief are filed herewith, together with the $320.00 fee required under 37 CFR § 1.17 (c). Also, please provide any extension of time which may be necessary and charge any fees which may be due to Account No. 03-1129, but not to include any payment of issue fees.

(1) REAL PARTY OF INTEREST

Caterpillar Inc. of Peoria, Illinois is the assignee of the patent application and the real party of interest.

(2) RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences related to this patent application (serial no. 09/587,544).

(3) STATUS OF CLAIMS

Claims 1-6 and 8-18 are pending in the application.

Claims 1-6 and 8-18 are rejected and are being appealed. These claims are shown in the Appendix attached to this Appeal Brief.

(4) STATUS OF AMENDMENTS

Appellants filed a Response after Final Rejection on July 25, 2002 prior to the Advisory Action mailed January 10, 2003. The aforementioned Response was considered but was not deemed to place the application in condition for allowance.

(5) SUMMARY OF INVENTION

The present invention relates generally to the use of pilot hydraulics for controlling a pair of stabilizer legs for a backhoe loader machine that includes the ability to simultaneously retract the pair of stabilizer legs from an extended position to a fully retracted.

It is well known that a machine, such as a backhoe loader, is used to dig ditches, foundations, basements, and the like. During such machining operations, the backhoe loader machine utilizes a pair of stabilizer legs to maintain a steady and solid working foundation. The foundation is established when the pair of stabilizer legs are extended either individually or together by separate and continuous activation of a pair of control switches. Each one of the pair of control switches is coupled with a respective one of the pair of stabilizer legs and the amount of stabilizer leg extension depends on the

surrounding terrain. Generally, upon completion of machining operations, the pair of stabilizer legs is retracted through the separate and continuous activation of the pair of control switches.

In an effort to achieve multiple operation of various outrigger assemblies, which are similar to the stabilizer legs in the Appellants' invention, control systems have been established that operate numerous cylinders to extend, retract, and lower and raise the outriggers through actuation of horizontal and vertical stabilizer cylinders, respectively. Simultaneous extension or retraction of the outrigger assemblies is achieved by the continuous operation of various switches in combination. However, the ability to simultaneously retract the outrigger assemblies through a single switch that does not require continuous operation is not known. The ability to simultaneously retract the outrigger assemblies in such a manner would improve operator flexibility by lessening the time and energy normally spent on retracting the outrigger assemblies. Appellants' invention addresses the aforementioned deficiencies of these known control systems.

Referring now to FIGS. 1-4, a work machine 10, such as a backhoe loader, is shown incorporating an extension and retraction system 20 for a pair of stabilizer legs 24,28. The backhoe loader 10 includes a machine frame 32 with front and rear end portions 36,40 supported for travel by a plurality of wheels, one of which is shown at 44. An electrical power source 48, such as a battery, is disposed in a well-known manner within the frame 32 of the backhoe loader 10 and is shown schematically in Figs. 3-4. A cab 60 is mounted on the frame 32 in a well-known manner and has an interior portion 64. The interior portion 64 includes a seat 68 therein for occupation by an operator (not shown). The seat 68 swivels between front and rear positions 80,84 (the rear position 84 being shown in Fig. 1 and the front position 80 being shown in Fig. 2). When the seat 68 is in the rear position 84, it faces a rear control panel 88. The rear control panel 88 is connected in a well-known manner within the interior portion 64 of the cab 60.

The pair of stabilizer legs 24,28 is secured on the rear end portion 40 of the frame 32 in a conventional manner. The stabilizer legs 24,28 are movable between a fully extended position 130 (shown in Fig. 1) and a fully retracted position 134 (shown in Fig. 2). It should be understood that the stabilizer legs 24,28 may be positioned at any

one of a plurality of positions along the fully extended and fully retracted positions 130,134. The movement of the stabilizer legs 24,28 is accomplished through a respective pair of hydraulic cylinders 140,144. Each of the pair of hydraulic cylinders 140,144 are connected in a well-known manner at a first end 150 to the frame 32 and at a second end 154 to a respective one of the pair of stabilizer legs 24,28. The hydraulic cylinders 140,144 may be of any suitable type, but preferably are double actuated. The double actuated hydraulic cylinders 140,144 each include a housing 160 with a piston and rod assembly 164 therein.

Referring directly to an electro-hydraulic circuit 180 in Fig. 3, a control device 200 is disposed within the interior portion 64 to allow the operator (not shown) to select either forward or reverse directions of movement for the backhoe loader 10. It should be understood that the control device 200 may be of any suitable design for actuating either a standard or automatic transmission of the backhoe loader 10. A pair of control levers 208,212, shown in a neutral position 220, is accessible to the hands of the operator when the seat 68 is in the rear position 84. The control levers 208,212 are capable of movement between first and second positions 224,228 and an extreme third position 232 located beyond the second position 228.

The electro-hydraulic circuit 180 includes a main control valve system 250 with a reservoir 274 for holding a quantity of hydraulic fluid. The reservoir 274 is connected to a pump 280 via line 286. The pump 280 may be of any suitable type capable of pressurizing the hydraulic fluid. The pump 280 is connected to a pair of spool valves 290,294 via line 300. The spool valves 290,294 may be of any suitable type but capable of actuation from a normally closed position (shown in Fig. 3) to either a first or second open position (not shown). Each of the spool valves 290,294 is connected to a respective one of the pair of hydraulic cylinders 140,144. The piston and rod assembly 164, normally disposed at a mid-position, is capable of moving the stabilizer legs 24,28 between the extended and retracted positions 130,134 dependent upon the introduction of pressurized hydraulic fluid into either upper or lower portions 320,324 of the hydraulic cylinders 140,144 through lines 330,334, respectively, in response to movement of the

spool valves 290,294 to either of the first or second open positions (not shown) in a well-known manner.

A pilot control valve system 340 is connected with the main control valve system 250 and includes a pair of pilot valves 344,348 connected with each control lever 208,212 and each spool valve 290,294, respectively. A pump 352 of any suitable type capable of pressurizing the hydraulic fluid is connected with each of the pilot valves 344,348. An additional reservoir 356 for holding a quantity of hydraulic fluid is also connected with the pilot valves 344,348. One of the pair of pilot valves 348 includes a solenoid detent 360 therein of a magnetic type.

An electrical control system 364 is connected between the main control valve system 250 and the pilot valve system 340. The electrical control system includes a control switch 374 connected with one of the pair of pilot valves 348. The control switches 374 are activated by the control levers 208,212 when the control levers 208,212 are moved to the second or third positions 228,232 via the electrical power source 48 in a well-known manner. A timer relay 390 is connected with each of the solenoid detents 360 and the control switches 374. An alarm device 404 is connected with the control switches 374 and the control device 200 and located therebetween.

Prior to operation of the backhoe loader 10 for digging, trenching, and the like, the operator (not shown) will generally stabilize the backhoe loader 10 by extending the stabilizer legs 24,28 into contact with the surrounding terrain. To accomplish the extension, the operator (not shown) will manually move the control levers 208,212 from the neutral position 220 to the first (or extend) position 224. The movement of the control levers 208,212, actuates the pilot valves 344, which, in turn, actuate the respective spool valves 290,294 in a well-known manner. The actuation of the spool valves 290,294 directs high-pressure hydraulic fluid into the upper portion 320 of the hydraulic cylinders 140,144 to move the stabilizer legs 24,28 accordingly. It should be understood that the control levers 208,212 may be operated individually to set the stabilizer legs 24,28 at any location between the retracted and extended positions 134,130.

For retraction of the stabilizer legs 24,28, the operator (not shown) will manually move the control levers 208,212 from the neutral position 220 to the second (or

retract) position 228 opposite of the first position 224. The movement of the control levers 208,212, actuates the pilot valves 348, which, in turn, actuate the respective spool valves 290,294 in a well-known manner. The actuation of the spool valves 290,294 directs high-pressure hydraulic fluid into the lower portion 324 of the hydraulic cylinders 140,144 to move the stabilizer legs 24,28 accordingly. Again, it should be understood that the control levers 208,212 may be operated individually to set the stabilizer legs 24,28 at any location between the extended and retracted positions 130,134. Additionally, the movement of the control levers 208,212 to the second position 228 activates the control switches 374. The control switches 374, in turn, activate the timer relay 390 which activates the solenoid detents 360. The movement of the control device 200 to operate the backhoe loader 10 in either the forward or reverse direction will cause the alarm device 404 to sound when the control levers 208,212 are in the retract position 228. This occurs when the alarm device 404 is activated by a signal from both the activated control device 200 and the activated timer relay 390. However, when the control levers 208,212 are in the retract position 228, the solenoid detents 360 are sufficiently distanced from the control levers 208,212 to prevent the magnetic forces of the solenoid detents 360 from acting on (holding) the control levers 208,212, even though the solenoid detents 360 are activated. Therefore, it should be understood that the control levers 208,212 are designed to return to the neutral position 220 after being moved to either the extend or retract positions 224,228 in response to a spring (not shown) of well-known design disposed within the control levers 208,212.

The automatic retraction of the stabilizer legs 24,28 is accomplished by manually moving either of the control levers 208,212 to the third (or auto-retract) position 232. Similar to the retract position 228, the movement of the control levers 208,212 to the auto-retract position 232 activates the control switches 374. The control switches 374, in turn, activate the timer relay 390 which activates the solenoid detents 360. However, when the control levers 208,212 are located in the auto-retract position 232, the distance of the control levers 208,212 from the solenoid detents 360 is sufficiently close to allow the solenoid detents 232 to magnetically hold the control levers 208,212 in the auto-retract position 232. The magnetic hold of the solenoid detents 360 is controlled by

the timer relay 390 for a preselected time, preferably greater than the total time necessary to fully retract the respective stabilizer leg 24,28 from the fully extended position 130. Therefore, the stabilizer legs 24,28 may be moved completely to the fully retracted position 134 from any one of the plurality of extended positions 130 within the preselected time. Of course, it should be understood that simultaneous retraction is accomplished when both of the control levers 208,212 are moved to the auto-retract position 232. However, if the control levers 208,212 are moved by the operator (not shown) during the preselected time, the automatic or simultaneous retraction of the stabilizer legs 24,28 is interrupted. This occurs due to the deactivation of the control switch 374 which allows for the release of the magnetic hold of the solenoid detents 360 on the control levers 208,212. Further, if the operator (not shown) moves the control device 200 into gear during the preselected time, thus selecting the forward or reverse direction of movement for the backhoe loader 10, the alarm device 404 will sound, as similar to when the control levers 208,212 are in the retract position 228. Also, it should be understood that the alarm device 404 will sound if the backhoe loader 10 is in the forward or reverse direction and the control levers 208,212 are moved to the retract position 228. Further, it should be understood that the control lever 208 may be configured in such a manner so as to facilitate the auto-retraction of both of the stabilizer legs 24,28 without the use of control lever 212. This may be accomplished through the utilization of a joystick controller (not shown) in place of the control lever 208 that is capable of movement in various directions.

(6) ISSUE

Whether Claims 1-6 and 8-18 are unpatentable under 35 U.S.C. § 103 (a) as being obvious over Phillips (Patent No. 4,124,226) in view of Frase (Patent No. 4,496,004).

(7) GROUPING OF CLAIMS

Claims 1-6 and 8-18 form one group which is argued together for purposes of this appeal.

(8) ARGUMENT

Independent Claims 1, 11 and 16 are not obvious over Phillips in view of Frase

Discussion re: Patentability of Independent Claims 1, 11 & 16

Appellants' Claims 1, 11 & 16 are set forth below:

1. A method of automatically retracting a stabilizer leg for a work machine, the work machine operatively associated with a power source and having a control device for selecting forward or reverse directions of movement for the work machine, comprising the steps of:

utilizing a control lever for moving the stabilizer leg between fully extended and fully retracted positions, the control lever being normally located in and biased to a neutral position;

manually moving the control lever to either of an extend position or a retract position;

manually holding the control lever in either of the extend or retract positions to respectively extend or retract the stabilizer leg to any of a plurality of positions between the fully extended and fully retracted positions;

manually moving the control lever to an auto-retract position; and

retaining the control lever in the auto-retract position without further manual manipulation thereof through a responsive means that overcomes the biasing action of the control lever to facilitate the automatic retraction of the stabilizer leg from any of the plurality of desired positions to the fully retracted positions.

11. A work machine having front and rear end portions, a control panel disposed within an interior of the work machine, a pair of stabilizer legs connected to the rear end portion, a hydraulic cylinder operatively associated with each of the pair of stabilizer legs for moving the stabilizer legs in a plurality of desired positions between fully extended and fully retracted positions via a source of hydraulic fluid, and a control device located within

the interior of the work machine for selecting the forward or reverse direction of the work machine, comprising:

a main valve connectable with each of the hydraulic cylinders for controlling the movement of the stabilizer legs;

a pair of pilot valves in connection with each of the main valves;

a pair of control levers in connection with a respective pair of pilot valves for actuation thereof, the control levers normally biased to a neutral position and movable between a first position for actuating the main valves in response to the actuation of one of the pilot valves to extend the stabilizer legs to any of the desired positions, a second position for actuating the main valves in response to the actuation of the other of the one of the pilot valves to retract the stabilizer legs to any of the desired positions, and a third position; and

means for automatically retaining the pair of control levers in the third position for actuating the main valves in response to the actuation of the other one of the pilot valves to simultaneously retract the stabilizer legs from any of the desired positions to the fully retracted position within a preselected period of time.

16. A method of automatically retracting a stabilizer leg for a work machine, the work machine operatively associated with a power source and having a control device for selecting forward or reverse directions of movement for the work machine, comprising the steps of:

utilizing a pair of control levers for moving a pair of stabilizer legs between fully extended and fully retracted positions, the control levers being normally located in a neutral position and movable to first, second, and third positions wherein the movement of either of the control levers to the first position promotes the movement of a respective stabilizer leg to a plurality of extended positions and the movement of either of the control levers to the second position promotes the movement of the respective stabilizer leg to a plurality of retracted positions, the control levers being biased to the neutral position when in the first, second, or third position;

moving either of the control levers to the third position; and

automatically maintaining either of the control levers in the third position to overcome the biasing action on the control levers for moving the respective stabilizer leg from any of the plurality of extended or retracted positions to the fully retracted position.

The Examiner states the following on pages 2-6 of the Office Action dated April 30, 2002:

> Claims 1-6 and 8-18: Phillip teaches a work machine comprising front and rear end portion, a control panel located in the interior of the machine, a pair of stabilizer legs (32,33) connected the rear end portion, hydraulic cylinders (52,53) associated with each stabilizer in order to extend and retract them, a main valve (62,63) connectable (applicant should note the term connectable only requires that the main valve is capable of being connected to) with each of the hydraulic cylinders for controlling the movement of the stabilizer legs, a pair of pilot valves (62a,62b,63a,63b) in connection with each of the main valves, a pair of control levers (switches, 75,77) in connection with a respective pair of pilot valves for actuation thereof.
>
> Phillips does not specifically teach using control levers that are normally biased to a neutral position, have a first position for extending the respective stabilizer leg while the lever is manually held in the first position, a second position for retracting the respective stabilizer leg while the lever is manually held in the second position, and a retaining means for automatically retaining the lever in the third position for a predetermined period of time in order to retract the respective stabilizer leg to its fully retracted position.
>
> Frase teaches that it is conventional to use a hydraulic control lever (144) that is normally biased to a neutral or hold position (152), has a first position (154) for extending (raising) a hydraulic cylinder while the lever is manually held in the first position, a second position (156) for retracting (lowering) a hydraulic cylinder while the lever is manually held in the second position. Further, Frase discloses a relay (194) and timer (194-2) connected to the control valve and operable therewith.

This type of control valve is conventional in the art of hydraulic control systems. The Examiner takes official notice that, in this sort of control valve the control lever may be moved partially into the first or second positions, causing the slow or gradual actuation of the hydraulic cylinder. Alternatively, the control lever may be moved completely into the first and second position, at which time the lever will be retained in said first or second position until the cylinder reaches a fully extended or retracted position at which time the increase in pressure will cause the lever to be returned to the neutral position. Manual operation of the control lever to partially engaged position from the completely engaged position will disengage the automatic retraction or extension of the hydraulic cylinder and return the control to manual operation. Further, this type of control valve may have some sort of detent mechanism for retaining the valve in the completely actuated position. In the Frase application, the hydraulic control valve would allow the operator to lower the rakes manually by moving the control lever toward the second (lowering) position. When the operator wishes to raise the rakes, he would simply moves the control lever completely to the first position, where the lever is retained by the detent means until the rakes are completely raised. Additionally, multiple cylinders (both sides of the rakes) are often actuated by a single control lever. A typical valve of this type is the GRESEN 400 series hydraulic valve with optional three position detent mechanism.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to use a control lever of the type disclosed by Frase, on the work vehicle of Phillips, because it would allow the user to fully retract the member without having to manually hold the switch in the retract position.

Claim 6: Phillips and Frase do not teach a spool valve connected between the pair of pilot valves and the hydraulic cylinder, however, Phillips does disclose lockout valves (82,83) in this location that perform the same general function. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide spool valves instead of the lockout valves disclosed by Phillips, because the spool valves could be actively controlled by the vehicle or operator.

Claim 15: Systems that activate an alarm signal of some sort in response to the operator attempting to move a vehicle while a stabilizer leg is still partially retracted are old and well-known in the art and would be an obvious improvement. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide an alarm in response to an attempt to move the vehicle by the operator placing the vehicle in a forward or reverse gear, because it would be a safety feature and would prevent the operator from damaging the stabilizer legs and nearby objects.

Claims 16-18: The method of using the claimed apparatus would be an obvious method of using the apparatus set forth above.

In order to use a reference to support an appropriate 35 U.S.C. § 103 rejection, there must be a **basis in the art for combining or modifying the references**. Because there are differences between the subject matter claimed and the teaching of the prior art (or else a rejection under 35 U.S.C. § 102 would have sufficed), there should be some incentive in at least one or a combination of the prior art references that teach or suggest the claimed invention via a modification of at least one or more of the other prior art references. *In re Geiger*, 815 F.2d at 688, 2 USPQ2d at 1278 (Fed. Cir. 1987).

1. Frase Does Not Teach or Suggest the Modification

Frase teaches an improved collapsible farm implement of the type having a wheeled frame or cart and right and left side elongated toolbars pivoted at the inboard ends about vertical axes relative to the frame so as to allow toolbar rotation rearward through approximately a quarter turn between a fully elevated field use position disposed crosswise to the path of implement travel and a road transit position disposed parallel to the path of implement travel. A wheeled truck assembly is mounted near the outboard end of each toolbar for providing rolling support of the latter, and each wheeled truck assembly can be rotated relative to the toolbar about an axis disposed substantially normal to the toolbar through approximately a quarter turn operable to steer the outboard end of the toolbar, upon appropriate forward of rearward implement movement, between the respective fully elevated

field use and road transit positions. To provide a compact collapsed implement, each toolbar is pivoted or rotated approximately a quarter turn about a horizontal axis disposed substantially parallel to the toolbar so as to raise and lower tool elements carried on the toolbars between a lowered operative field use position adjacent the ground and a fully elevated field use position disposed substantially normal to the ground. Partial toolbar rotation is utilized during normal field operation to raise tool elements clear of the ground for turning at the end of field passes. A power cylinder is used to steer each wheeled truck assembly and to rotate each toolbar for raising and lowering the tool elements, and a flow divider is used to admit equal volumes of pressurized hydraulic fluid to the cylinders so that synchronized steering or tool element lift operation takes place. An electrical control has a plurality of limit switches, one of which is used to prevent the operation of the steering wheeled truck assemblies from the field use position except when the tool elements are completely elevated or are vertical, while another limit switch precludes operation of the power lift cylinder for the toolbars in any position other than when the toolbars are in the elevated or lowered field use positions.

In this regard, Frase teaches that it is desirable to promote synchronized raising and lowering of all tool elements when in either of the elevated or lowered field positions only. Conversely, Appellants Claims 1, 11 & 16 state that retraction of the stabilizer leg is available from "any of the plurality of desired positions to the fully retracted position". The application of the Frase invention on Phillips, as suggested by the Examiner, would not achieve the ability to simultaneously retract all of the outriggers from any position to the fully retracted position. Because this capability is not taught or suggested in the Frase reference, it would be impermissible to combine Frase with Phillips to achieve Appellants' claimed invention. Further, there is no technological motivation for engaging in the modification of Phillips through that disclosed in Frase. This is true because the ability to achieve Appellants' claimed invention would destroy the function of Frase. In particular, in Column 12, lines 5-12 of Frase, the preclusion of the operation of the lift cylinder circuit in any position other than when the toolbars are fully extended in the lowered or elevated field use position minimizes potential damage to the unit. Conversely, in Appellants' claimed invention, there

is no such restriction. Therefore, there would be a disincentive to modify Phillips via the Frase reference.

The Examiner in the Final Rejection dated April 30, 2002, argues that the operation of Frase allows the toolbar to stop in a plurality of positions to accommodate varying terrain. The Examiner states that not all terrain will allow the toolbar to be lowered to the systems fully lowered position. Further, the Examiner states that the "lowered position" referred in Frase et al. does not imply that there is only one position at which the toolbar will stop, but rather that the toolbar can be stopped in a plurality of positions, as needed. As argued above by the Appellants, it is not that the Frase reference has a plurality of positions wherein the toolbar can be stopped. More accurately, the inability of Frase to utilize the lift cylinder except only in the elevated or lowered field positions is not equivalent to Appellants' claimed invention in that it doesn't matter on Appellants' claim invention when the lift cylinder can be utilized (e.g., from any position of the stabilizer leg). Therefore, the modification of Phillips by the information disclosed in Frase would not achieve the Appellants' claimed invention.

2. Frase Does Not Include All the Claim Limitations of Appellants' Claims 1, 11 & 16

The Federal Circuit has held that the reference must be considered in view of all the claim limitations of the claimed invention. The mere absence of an explicit requirement cannot reasonably be held as an affirmative statement that the requirement is in the reference (*see, In re Evanega*, 829 F.2d 1110, 4 USPQ2d 1249 (Fed. Cir. 1987)).

In Appellants' claims 1, 11, and 16, and as argued previously above, Appellants claim that the retraction of the stabilizer leg is available from "any of the plurality of desired positions to the fully retracted position". As can be seen in Frase, this feature is not available. The Examiner, in stating that it would be obvious to one of ordinary skill in the art to use a control lever of the type disclosed by Frase on the work vehicle of Phillips because it would allow the user to fully retract the member without having to manually hold the switch in the retract position, has not considered that Frase does not include the limitation that the retraction is available from any desired position. Unlike Frase, Appellants have no restriction as to the position of the stabilizer legs prior to retraction. Therefore, Appellants respectfully submit that the limitations of Appellants' Claims 1, 11 & 16 must be considered in light of

the Frase disclosure. In that consideration, Appellants respectfully believe that it will be found that it is not obvious from Frase to achieve that which the Appellants claim.

Conclusion

Since Frase does not teach or suggest Appellants' claimed invention and does not disclose all the limitations of Appellants' Claims 1, 11 & 16, the use of Frase does not establish a prima facie case of obviousness under 35 U.S.C. § 103(a) with regard to Appellants' invention of Claims 1, 11 & 16.

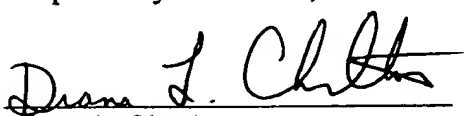
Discussion re: Patentability of Claims 2-6, 8-10, 12-15, and 17-18

Each of Claims 2-6, 8-10, 12-15, and 17-18 include Claims 1, 11, or 16, respectively, as a base claim. Therefore, Claims 2-6, 8-10, 12-15, and 17-18 are allowable for the reasons hereinbefore discussed with regard to Claims 1, 11, & 16.

9) CONCLUSION

Claims 1-6 and 8-18 are not unpatentable under 35 U.S.C. § 103(a) as being obvious over the cited art. Accordingly, the Board of Appeals is respectfully requested to reverse the rejection of the aforementioned claims.

Respectfully submitted,



Diana L. Charlton
Attorney for Appellants
Registration No. 36,103

April 2, 2003

Caterpillar Inc.
100 N.E. Adams St.
Peoria, Illinois 61629-6490
Telephone (309) 675-5083
Facsimile (309) 675-1236

APPENDIX

1. A method of automatically retracting a stabilizer leg for a work machine, the work machine operatively associated with a power source and having a control device for selecting forward or reverse directions of movement for the work machine, comprising the steps of:

utilizing a control lever for moving the stabilizer leg between fully extended and fully retracted positions, the control lever being normally located in and biased to a neutral position;

manually moving the control lever to either of an extend position or a retract position;

manually holding the control lever in either of the extend or retract positions to respectively extend or retract the stabilizer leg to any of a plurality of positions between the fully extended and fully retracted positions;

manually moving the control lever to an auto-retract position; and

retaining the control lever in the auto-retract position without further manual manipulation thereof through a responsive means that overcomes the biasing action of the control lever to facilitate the automatic retraction of the stabilizer leg from any of the plurality of desired positions to the fully retracted positions.

2. The method of automatically retracting a stabilizer leg of claim 1, wherein the step of retaining the control lever in the auto-retract position includes the steps of:

activating a control switch by the movement of the control lever to the retract or auto-retract position, the control switch being communicable with the power source;

activating a time delay mechanism in response to the activation of the control switch; and

activating a solenoid detent in response to the activation of the time delay mechanism, the solenoid detent acting as the responsive means for retaining the control lever in the auto-retract position and being operative with the time delay mechanism to facilitate the automatic retraction of the stabilizer leg within a preselected time.

3. The method of automatically retracting a stabilizer legs of claim 2, including the step of:

disabling the solenoid detent and interrupting the automatic retraction of the stabilizer leg by manually moving the control lever during the preselected time.

4. The method of automatically retracting a stabilizer leg of claim 3, including the step of:

activating an alarm device coupled with the control device and time delay mechanism by selecting the forward or reverse direction of the work machine with the control device prior to the completion of the preselected time.

5. The method of automatically retracting a stabilizer leg of claim 3, including the step of:

activating an alarm device coupled with the control device and time delay mechanism by having the forward or reverse direction of the work machine selected via the control device and with the control lever in either of the retract or auto-retract positions.

6. The method of automatically retracting a stabilizer leg of claim 1, wherein manually holding the control lever for moving the stabilizer leg from any of the plurality of desired positions to the fully retracted position includes the steps of:

initializing a flow of hydraulic fluid to move from a pump to a hydraulic cylinder in connection with the stabilizer leg;

actuating a pair of pilot valves connected with the pump to an open position through the flow of the hydraulic fluid; and

actuating a spool valve connected between the pair of pilot valves and the hydraulic cylinder to an open position through the flow of hydraulic fluid in response to the actuation of the pair of pilot valves.

7. Cancelled

8. The method of automatically retracting a stabilizer leg of claim 1, including the step of:

utilizing the control lever for moving a second stabilizer leg between fully extended and fully retracted positions;

manually moving the control lever to either of a second extend or retract position;

manually holding the control lever in either of the second extend or retract positions to respectively extend or retract the second stabilizer leg to any of a plurality of desired positions between the fully extended and fully retracted positions;

manually moving the control lever to a second auto-retract position; and

retaining the control lever in the second auto-retract position without further manual manipulation thereof through a responsive means that overcomes the biasing action of the control lever to facilitate the automatic retraction of the second stabilizer leg from any of the plurality of desired positions to the fully retracted position.

9. The method of automatically retracting a stabilizer leg of claim 1, including the step of:

utilizing a second control lever for moving a second stabilizer leg between fully extended and fully retracted positions, the second control lever being normally located in and biased to a neutral position;

manually moving the first and second control levers to either of an extend position or a retract position;

manually holding the first and second control levers in either of the extend or retract positions to respectively extend or retract the first and second stabilizer legs to any of a plurality of desired positions between the fully extended and fully retracted positions;

manually moving the first and second control levers to an auto-retract position; and

retaining the first and second control levers in the auto-retract position without further manually manipulation thereof through a responsive means that overcomes the biasing action of the first and second control levers to facilitate the automatic and

simultaneous retraction of the first and second stabilizer legs from any of the plurality of desired positions to the fully retracted position.

10. The method of automatically retracting a stabilizer leg of claim 9, wherein the step of retaining the first and second control levers in the auto-retract position includes the steps of:

activating a respective control switch by the movement of the first and second control levers to the retract or auto-retract position, the control switches being communicable with the power source;

activating a respective time delay mechanism in response to the activation of the control switches; and

activating a respective solenoid detent in response to the activation of the time delay mechanisms, the solenoid detents acting as the responsive means for retaining the first and second control levers in the auto-retract position and being operative with the respective time delay mechanism to facilitate the automatic retraction of the first and second stabilizer legs within a preselected time.

11. A work machine having front and rear end portions, a control panel disposed within an interior of the work machine, a pair of stabilizer legs connected to the rear end portion, a hydraulic cylinder operatively associated with each of the pair of stabilizer legs for moving the stabilizer legs in a plurality of desired positions between fully extended and fully retracted positions via a source of hydraulic fluid, and a control device located within the interior of the work machine for selecting the forward or reverse direction of the work machine, comprising:

a main valve connectable with each of the hydraulic cylinders for controlling the movement of the stabilizer legs;

a pair of pilot valves in connection with each of the main valves;

a pair of control levers in connection with a respective pair of pilot valves for actuation thereof, the control levers normally biased to a neutral position and movable between a first position for actuating the main valves in response to the actuation of one of

the pilot valves to extend the stabilizer legs to any of the desired positions, a second position for actuating the main valves in response to the actuation of the other of the one of the pilot valves to retract the stabilizer legs to any of the desired positions, and a third position; and

means for automatically retaining the pair of control levers in the third position for actuating the main valves in response to the actuation of the other one of the pilot valves to simultaneously retract the stabilizer legs from any of the desired positions to the fully retracted position within a preselected period of time.

12. The work machine of claim 11, wherein the retaining means includes a control switch connected to each one of the pair of pilot valves and communicable with the power source, a time delay mechanism connected with and responsive to the control switches, and a solenoid detent connected between the time delay mechanism and each of the pair of control levers and operative with the time delay mechanism.

13. The work machine of claim 12, wherein the solenoid detent is engaged with a respective control lever when the respective control lever is in the third position.

14. The work machine of claim 12, wherein movement of the pair of control levers during the preselected time interrupts the simultaneous retraction of the pair of stabilizer legs.

15. The work machine of claim 12, wherein the movement of the work machine via the control device while the pair of control levers is in either of the second or third positions activates an alarm device.

16. A method of automatically retracting a stabilizer leg for a work machine, the work machine operatively associated with a power source and having a control device for selecting forward or reverse directions of movement for the work machine, comprising the steps of:

utilizing a pair of control levers for moving a pair of stabilizer legs between fully extended and fully retracted positions, the control levers being normally located in a neutral position and movable to first, second, and third positions wherein the movement of either of the control levers to the first position promotes the movement of a respective stabilizer leg to a plurality of extended positions and the movement of either of the control levers to the second position promotes the movement of the respective stabilizer leg to a plurality of retracted positions, the control levers being biased to the neutral position when in the first, second, or third position;

moving either of the control levers to the third position; and

automatically maintaining either of the control levers in the third position to overcome the biasing action on the control levers for moving the respective stabilizer leg from any of the plurality of extended or retracted positions to the fully retracted position.

17. The method of automatically retracting a stabilizer leg of claim 16, wherein the step of automatically maintaining either of the control levers in the third position includes the step of:

initially contacting either of the control levers to move them to the third position and relinquishing contact after the control levers are in the third position.

18. The method of automatically retracting a stabilizer leg of claim 16, including the steps of:

connecting a control switch with each of the respective control levers, the control switch being communicable with the power source;

connecting a time delay mechanism with the control switches;

connecting a solenoid detent with the time delay mechanism;

moving either of the control levers to the second or third position activates the control switch, time delay mechanism, and solenoid detent, the solenoid detent maintaining the respective control lever in the third position in response to the time delay mechanism so that the automatic retraction of the respective stabilizer leg is completed within a preselected time; and

moving the control levers during the preselected time disables the solenoid detent and interrupts the automatic retraction of the stabilizer legs.